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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,993	11/26/2001	Alvin Wexler	595PO2US-1	4304

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EXAMINER

MANTIS MERCADER, ELENI M

ART UNIT

PAPER NUMBER

3737

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,993

Applicant(s)

WEXLER ET AL.

Examiner

Eleni Mantis Mercader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-4 and 7-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/801,706 (as presented in PGPUBs US 2002/0138019 because the application is currently unavailable). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the current invention constitute an alternative functional equivalent of combining the peak-detection method and the pattern convergence into a limited number of iterations yielding the same end result of efficient image production as would the alternative of infinite number of iterations with the pattern of convergence.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-4 and 7-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 of U.S. Patent No. 6,201,990.

Although the conflicting claims are not identical, they are not patentably distinct from each other

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because the current claims further express what constitutes an acceleration procedure, wherein the current claims with the elements of the basic algorithm or alternative combinations of the peak-detection and the pattern convergence into a limited number of iterations yields the same end result of efficient image production.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wexler et al. '990.

Wexler et al. '990 teach all the features of the current invention including a method of imaging objects in a medium, the objects having specific impedances which are different from the specific impedance of the medium comprising, applying an electrical current to the medium at various locations, detecting voltages produced by the current which has passed through the medium from the surface of the medium at various locations, changing the value and locations for applying the electrical current and measuring the voltages, successively determining the region of the medium in which the objects are located with increasing accuracy by processing values of the detected voltages, using an algorithm to solve the field conditions in the medium, thereby determining a region in the medium in which the objects are located (see col. 3, lines 66-67 and col. 4, lines 1-11). The extracted shape, location and image are best illustrated with respect to Figures 7A-7B (see col. 11, lines 8-16).

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Wexler et al.'990 further teach the use of localization of the objects via use of "hills" and "valleys" (col. 6, lines 19-32) by using the peak-detection method with conductivity and the associated algorithms (see col. 6, lines 58-67, cols. 7-8 and col. 9, lines 1-56). In addition, Wexler et al.'990 further teach the use of pattern convergence as a way to accelerate the imaging process (see col. 9, lines 57-62); the use of plural paired electrodes used on the surface of the body part of interest (see col. 4, lines 56-67) and applicability of the device in mammography (see col. 3, lines 46-53).

Wexler et al.'990 do not expressly state the use of a predetermined number of iterations for convergence or alternatively the use of the basic algorithm.

Wexler et al.'990 however teach an alternative functional equivalent of combining the peak-detection method and the pattern convergence into a limited number of iterations yielding the same end result of efficient image production as the basic algorithm (see col. 11, lines 24-30).

It would have been obvious to one skilled in the art at the time that the invention was made to have modified the algorithms provided by Wexler et al.'990 or the combination of the peak-detection method and the pattern convergence to provide alternative functional equivalents or alternative modified mathematical versions which nonetheless provide the same end result of efficient image production.

6. Claims 5-6 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bai et al.'835.

Bai et al.'835 teach use of the device for diagnosis of breast tumors (see col. 1, lines 18-23), positioning an electrode array consisting of an array of electrodes on the surface of the

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breast on the inner surface of a dielectric container containing a conductive fluid, passing current between selected electrodes sequentially, measuring the voltages between electrodes, and calculating the position and size of tumors from the potential and conductivity information derived from said voltage measurements (see col. 3, lines 7-30; col. 4, lines 39-60; and claim 9). Bai et al.'835 further teach displaying the calculated position and size of the tumor since they teach a visible tomographic representation (see claim 9).

Bai et al.'835 do not specifically address pairs of electrodes being used, however it would have been obvious to one skilled in the art at the time that the invention was made that using electrodes in a 3D array in various combinations (as stated in claim 9 of Bai et al.'835) would include pairs of electrodes (also note that the claims of the current invention use the transitional open term phrase "comprising", thereby not excluding other combinations).

Bai et al.'835 do not specifically address malignancy, however it is well within the knowledge of skilled artisans, and therefore it would have been obvious to one skilled in the art at the time that the invention was made that once a tomographic image is generated the physician can draw diagnostic information from size and location regarding the tumor's malignancy status.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Church et al.'984 teach an electrical impedance method and electrode arrangement.

Isaacson et al.'333 teach current patterns for electrical impedance tomography.

Isaacson et al.'490 teach a process and an apparatus for distinguishing conductivities.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eleni Mantis Mercader whose telephone number is 703 308-0899. The examiner can normally be reached on Mon. - Fri., 8:00 a.m.-6:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 703 308-5181. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Eleni Mantis Mercader
Primary Examiner
Art Unit 3737

EMM